

ABSTRACT OF THE DISCLOSURE

An improved fuel cell is described. The invention addresses the problem of mechanical failure in thin electrolytes. One embodiment varies the thickness of the electrolyte and positions at least either the anode or cathode in the recessed region to provide a short travel distance for ions traveling from the anode to the cathode or from the cathode to the anode. A second embodiment uses a uniquely shaped manifold cover to allow close positioning of the anode to the cathode. Using the described structures results in a substantial improvement in fuel cell reliability and performance.